BIOLOGICAL EVALUATION OF FOREST INSECT CONDITIONS ON THE PAYETTE NATIONAL FOREST DURING 1968

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Forest Insect Conditions on the Payette National Forest 1968

Information for this report has been compiled from aerial and ground detection surveys, and on-the-ground biological evaluations of specific infestation centers. Verbal and written reports from your staff materially aided in pinpointing potentially serious insect threats to timber resources.

Several epidemic centers of Douglas-fir beetle activity were observed on the Forest this season. Pronounced activity was detected in the Primitive Area, along the South Fork of the Salmon River, and on three Districts comprising the lower west portion of the Forest. Decreasing Ips sp. activity was noted as midseason fading of ponderosa pine was minimal on forest lands; however, several large groups of second-growth stands on private lands were attacked northeast of New Meadows along Browns Creek Road and the Campbell Ditch. A large group of approximately 1,200 faded ponderosa pines was detected on private land near Fort Hall Hill north of Council. The trap tree program initiated in the Hazard Lake area appears to have reduced the spruce beetle epidemic that was threatening extensive stands of virgin timber. A complex of mountain and western pine beetles continued tree killing in two small infestations of stagnated second-growth ponderosa pine southeast of McCall. Scattered killing of lodgepole pine by mountain pine beetle was detected along irrigation waterways and drainages in Long Valley. An upsurge in defoliation by spruce budworm in Douglas-fir, true fir, and spruce was noted in and around old infestation centers this year. Also, new defoliation was detected in widely separated areas. Following is a more comprehensive discussion of individual pests.

SPRUCE BEETLE - Dendroctonus obesus (Mann)

Epidemic populations of spruce beetle which developed in road right-of-way saw logs in the Hazard Lake area were successfully attracted to trap trees felled this spring. Subsequent removal of the traps this fall appears to have eliminated the potential hazard of an epidemic in standing spruce in the Scribner and Hazard Lake areas. However, at this time we are unable to determine the status of hibernating adults which may not have been trapped. It is our understanding that a concerted effort by local timber operators will be made to cut the entire 12 MM bd. ft. sale in 1969. The abundance of slash created by an operation of that magnitude would undoubtedly suffice to attract residual populations of the spruce beetle if the material is available early enough to intercept emergence flights of hibernators. There is serious doubt that 1969 logging will start in time to provide "trap slash" due to late snowmelt. With this in mind, it is recommended that several hundred trees be felled late next logging season and left in place over winter. These trees will not be as effective as spring felled traps, but should suffice to attract emerging 1970 populations. They should be removed prior to snowfall in 1970.

We strongly recommend that slash in these sale areas be burned at the termination of next year's logging activities.

DOUGLAS-FIR BEETLE - Dendroctonus pseudotsugae Hopk.

An increasing number of infestation centers of epidemic proportions was detected on the Forest this year. Rapid buildups were noted in several areas. Although mortality in the Primitive Area and along the South Fork of the Salmon River is presently tolerated, commercial sales elsewhere could appreciably reduce current and future losses. Several areas should be considered for trapping and salvage operations, if any control is anticipated. Areas to be considered for the salvage logging, and reduction in high-risk stands are: Surdam Gulch and Keithly Creek (D-2); and the west facing slope of Indian Creek north of Cuprum to Glacier Basin (D-3). A yearly maintenance program around the Hitt Mountain ski area should be initiated to reduce the possibilities of problems similarly encountered at Bogus Basin on the Boise National Forest. Trees left for cover, shade, and wind barriers are being infested by nearby epidemic Douglas-fir beetle populations.

MOUNTAIN AND WESTERN PINE BEETLES - Dendroctonus ponderosae and Dendroctonus brevicomis Hopk.

This beetle complex was chiefly responsible for the mortality in two infestation centers south and east of McCall on non-Forest lands of mixed ownership. A scattered infestation of five hundred fading ponderosa pines was detected adjacent to the southwest corner of Little Payette Lake. Another 500-tree-attack center was located in Laffinwell Creek primarily on land owned by Elmer Brown of rural Donnelly. Similar attack patterns were observed in a larger 7-year-old epidemic near Cascade which killed approximately 10,000 trees. In these two infestations, where ponderosa pine is the primary host, tree killing occurs in scattered small groups of stagnated, small diameter, second-growth pine. To date, no control action is recommended.

These infestations are possibly sustained by the mountain pine beetle infestation in lodgepole pine along the river bottom south and east of town. Although the State Land Commission conducted a commendable control program by logging and chemical application last winter on the North Fork of the Payette River, a sufficient but scattered residual population of the pests exists along all drainages in Long Valley where lodgepole type is found. Due to the infestation size and distance from forest lands, encroachment is not expected this coming year. An analysis of brood densities and other biological factors is programed to establish the infestation trends in these two centers this spring.

There has been excellent cooperation from the State Department of Public Lands in combating beetle infestations on non-Federal lands the past two years. If the current rising trend in beetle activity persists, another control project may have to be undertaken.

Ips spp.

Ips beetle activity in ponderosa pine, which had reached epidemic proportions during the 1966 and 1967 field seasons, decreased considerably this year. A reduction of midsummer fading in standing second-growth ponderosa pine was evident. The impact of unseasonable mid-August precipitation was undoubtedly one factor which gave impetus to this downward trend. The longevity of these storms coincided with emergence of third-generation adults, apparently causing disruption of the destructive attack patterns which had been experienced the past two years. During 1966 and 1967, sustained periods of high temperatures, low precipitation and humidity provided ideal climatological conditions for Ips development. Favorable habitat in the form of timber downed during the winter and accumulations of green logging slash combined to offer optimum conditions for developing epidemic populations of this pest.

From a resource standpoint, the mortality suffered by the second-growth ponderosa pine on the Forest has in the past exceeded tolerable levels. In anticipation of the resurgence of epidemic populations with resulting loss of volume to future harvesting, a new approach to slash treatment should be considered. It is recommended that wherever possible piled slash be treated with mistblown applications of Lindane shortly before beetle emergence. We recognize there will be exceptions, such as logging debris resulting from cable operations. However, since midsummer controlled burns to remove fresh slash are hazardous, mistblown Lindane would provide an effective means of reducing Ips attacks to acceptable levels.

SPRUCE BUDWORM - Choristoneura fumiferana complex

For the past two years, aerial observations and on-the-ground egg mass surveys accurately indicated decreasing trends of the residual budworm populations on the Forest. This year, however, favorable climatic conditions and a suspected reduction in the parasite-predator complex were responsible for a noticeable increase in defoliation intensity in Douglas-fir, true fir, and spruce. This resurgence of budworm activity was evident on all Forests in the Zone, and not necessarily restricted to the Payette. Areas of spruce budworm defoliation by damage classes as determined by the 1968 aerial surveys follow:

DEFOLIATION INTENSITY (in acres)

Area	Light	Moderate	Heavy	Total
Big Creek Drainage	46,280	32,000	--	78,280
Chamberlain - McCalla Creeks	7,040	5,600	1,600	14,240
Salmon River Front Mackay Bar to Devils Toe Cr.	4,360	4,200	80	8,640

DEFOLIATION INTENSITY (in acres)

Area	Light	Moderate	Heavy	Total
South Fork of Salmon River from Mackay Bar to Secesh River entry	20,480	2,920	--	23,400
Secesh River - Split Cr. Pt.	7,120	1,120	2,120	10,360
Fitsum Cr.	1,320	--	--	1,320
Buckhorn Cr.	3,440	--	--	3,440
Cougar - Martin Creeks	3,640	--	--	3,640
Salmon River (Warren to Partridge Creek)	29,800	23,640	1,920	55,360
Little Salmon River	7,680	--	--	7,680
Rapid River (Granite Fork)	800	--	--	800
Payette Lakes	13,480	--	--	13,480
Crooked River	1,000	--	--	1,000
Total	146,440	69,480	5,720	221,640

Egg mass collections were made in six locations outside the Primitive Area. These surveys give a fairly reliable estimate of population trends and resulting damage which may be expected in 1969.

Sampling Locations	No. Egg Masses/1,000 Sq. In. - 1968	Percentage Expected Defoliation - 1969
Fall Cr.	10.3	51-90%
Fall Cr. - #2	1.1	<15%
North Fork Payette River	6.7	25-50%
Little Buckhorn Cr.	2.1	<15%
Split Cr. Pt.	12.5	51-90%
Cow Cr.	.5	<15%

If bioclimatic factors do not adversely affect this coming year's populations, we expect increased defoliation in all known areas of infestation with the possibility of increasing damage to Douglas-fir and true fir.

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